IN THE CLAIMS

This listing of claims will replace all prior versions, and listings, of claims in the application:

Listing of Claims:

1. (Previously Presented) A method of embedding an additional layer of error correction into an error correcting code, wherein information is encoded into code words of said code and wherein a number of code words are arranged in the columns of a code block, said method comprising the acts of:

reducing the length of each row of said code block by adding X row symbols together to form Y row symbols replacing the X row symbols, Y being less than X, to form shortened rows according to a predetermined adding rule resulting in a reduced code block,

encoding the shortened rows of said reduced code block using a horizontal error correcting code to obtain horizontal parities, and

embedding said horizontal parities as additional layer in said error correcting code.

2.(Previously Presented) The method as claimed in claim 1, wherein said code block is a Long Distance Code (LDC) block comprising LDC code words, in particular Reed Solomon code words over GF(2^8), arranged in the columns of said LDC block.

3.(Previously Presented) The method as claimed in claim 2, further comprising the initial acts of:

reducing the length of each LDC code word of said LDC block resulting in a first intermediate block, and

extending each row of said first intermediate block by a predetermined number of symbols having predetermined values resulting in a second intermediate block which is used as code block in subsequent acts.

4.(Previously Presented) The method as claimed in claim 3, wherein the length of each LDC code word is reduced by puncturing a predetermined number of symbols at predetermined positions of each LDC code word.

5.(Previously Presented) The method as claimed in claim 3,

wherein the length of each LDC code word is reduced by selecting a predetermined number of symbols of a LDC code word and by determining a predetermined number of parity symbols for said LDC code word.

6.(Previously Presented) The method as claimed in claim 3, wherein the rows of said first intermediate block are extended by adding a predetermined number of symbols having symbol value zero to each row.

7.(Previously Presented) The method as claimed in claim 1, wherein the length of each row of said code block is reduced by adding the (m+(j+i mod k))-th symbol of each row to the j-th symbol of the same row, i being the row number, j being the column number and m being the maximum number of columns divided by 2.

8.(Previously Presented) The method as claimed in claim 1, wherein said code block comprises two blocks of a product code, in particular of a DVD product code, comprising product code words, in particular product code words of the same DVD product code such as

code words over $GF(2^6)$, arranged in the columns of said code block.

9. (Previously Presented) The method as claimed in claim 1, wherein said horizontal parities are encoded by an additional error correcting code, in particular by a Burst Indicator Subcode (BIS) comprising Reed Solomon code words over $GF(2^8)$ or by an additional parity code comprising Reed Solomon code words over $GF(2^8)$.

10. (Previously Presented) A method of decoding an error correcting code into which an additional layer of error correction is embedded according to a method of claim 1, wherein horizontal parities are embedded as additional layer in said error correcting code and wherein a number of code words of said code are arranged in the columns of a code block, said method comprising the acts of:

extracting said horizontal parities from said error correcting code,

reducing the length of each row of said code block by adding row symbols together identical to the method according to said predetermined adding rule used during the method of encoding according to claim 1 resulting in a reduced code block, and

decoding the shortened rows of said reduced code block using said horizontal parities.

11. (Previously Presented) The method as claimed in claim 10, further comprising the acts of decoding a received data stream to obtain said code block and of correcting errors and erasures in the obtained code block by subtracting row symbols of said obtained code block from row symbols of said reduced code block according to a predetermined subtraction rule reverse to said predetermined adding rule.

12. (Previously Presented) An apparatus for embedding an additional layer of error correction into an error correcting code, wherein information is encoded into code words of said code and wherein a number of code words are arranged in the columns of a code block, comprising:

means for reducing the length of each row of said code block by adding X row symbols together to form Y row symbols replacing the X row symbols, Y being less than X, to form shortened rows according to a predetermined adding rule resulting in a reduced

code block,

means for encoding the shortened rows of said reduced code block using a horizontal error correcting code to obtain horizontal parities, and

means for embedding said horizontal parities as additional layer in said error correcting code.

13. (Previously Presented) The apparatus for decoding an error correcting code into which an additional layer of error correction is embedded according to a method of claim 1, wherein horizontal parities are embedded as additional layer in said error correcting code and wherein a number of code words of said code are arranged in the columns of a code block, comprising:

means for extracting said horizontal parities from said error correcting code,

means for reducing the length of each row of said code block by adding row symbols together identical to the method according to said predetermined adding rule used during the method of encoding according to claim 1 resulting in a reduced code block, and

means decoding the shortened rows of said reduced code block

using said horizontal parities.

14. (Previously Presented) A storage medium storing data in form of code words of an error correcting code into which an additional layer of error correction is embedded according to a method of claim 1, wherein horizontal parities are embedded as additional layer in said error correcting code and wherein a number of code words of said code are arranged in the columns of a code block.

15. (Previously Presented) A signal comprising data in form of code words of an error correcting code into which an additional layer of error correction is embedded according to a method of claim 1, wherein horizontal parities are embedded as additional layer in said error correcting code and wherein a number of code words of said code are arranged in the columns of a code block.

16. (Previously Presented) A computer program comprising program code means for causing a computer to implement the acts of the method of claim 1 when said program is run on a computer.

17. (New) A method of embedding an additional layer of error correction into an error correcting code of a code block, the method comprising the acts of:

modifying each row of said code block to form modified rows resulting in a modified code block;

encoding the modified rows to obtain parities; and

embedding the parities as an additional layer in the error correcting code;

wherein a length of each modified row is reduced by adding (m+(j+i mod k))-th symbol of each modified row to the j-th symbol of the same modified row, i being a row number, j being a column number, and m being a maximum number of columns divided by 2.

18. (New) An apparatus for embedding an additional layer of error correction into an error correcting code of a code block, the apparatus comprising:

means for modifying each row of said code block to form modified rows resulting in a modified code block;

means for encoding the modified rows to obtain parities; and

means for embedding the parities as an additional layer in the error correcting code;

wherein a length of each modified row is reduced by adding (m+(j+i mod k))-th symbol of each modified row to the j-th symbol of the same modified row, i being a row number, j being a column number, and m being a maximum number of columns divided by 2.